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CENTRAL INTELLIGENCE AGENCY

INFORMATION REPORT

COUNTRY USSR

DATE DISTR. 8 Jan 53

SUBJECT Lubricating Materials Used in the USSR for the Lubricating of Motors and for Industrial Purposes

NO. OF PAGES 9

50X1 PLACE ACQUIRED

NO. OF ENCLS. (LISTED BELOW)

DATE ACQUIRED BY SOURCE

SUPPLEMENT TO REPORT NO.

DATE OF INFORMATION

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SOURCE

1. I am familiar with various lubricating oils and greases used throughout the Soviet Union. 50X1

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2. The grades and parameters of the greases I shall enumerate are standardized and have been used since 1951 in all aspects of the transport and industrial installations in the Soviet Union. The following greases are used in industry in the Soviet Union: vaseline, commercial dark brown, solidol (grades L, M and T), graphite grease, cable grease (grades A and V) and belt grease.

Mineral oils are used mainly in the lubricating of engines and in industry in general in the USSR. These mineral oils are products of distillation of

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petroleum and its residue (mazut). There are several grades of Avtol which are the basic lubricants for automobile and tractor engines. The choice of which grade of Avtol to be used is dependent upon the purpose for which the particular engine has been designed and the character of the work to be performed.

3. The grades of lubricants and the purposes for which they are used are:

(1) Avtol - 4
- (a) Specific gravity at 20° C. 0.911
- (b) Viscosity (Engler) at 50° C. 4.
- (c) Freezing point - 30° C.
- (d) Flash point (Brenken) 180° C.
- (e) Used for automobiles in the winter.

(2) Avtol - 6
- (a) Specific gravity at 20° C. 0.914
- (b) Viscosity (Engler) at 50° C. 5.5 to 6.5
- (c) Freezing point - 17° C.
- (d) Flash point 185° C.
- (e) Used for automobile engines in winter, spring and fall.

(3) Avtol - 8
- (a) Specific gravity at 20° C. 0.914
- (b) Viscosity (Engler) at 50° C. 8. to 9.
- (c) Freezing point - 8° C.
- (d) Flash point (Brenken) 190° C.
- (e) Used for automobile engines in the summer and for tractor engines in winter, spring and fall.

(4) Avtol - 10
- (a) Specific gravity at 20° C. 0.920
- (b) Viscosity (Engler) at 50° C. 11.
- (c) Freezing point -5° C.
- (d) Flash point (Brenken) 200° C.
- (e) Used for automobile engines in the summer and for tractor engines in winter, spring and fall.

(5) Avtol - 18
- (a) Specific gravity at 20° C. 0.926
- (b) Viscosity (Engler) at 50° C. 18
- (c) Freezing point 0° C.
- (d) Flash point (Brenken) 200° C.
- (e) Used for tractor engines in the summer

(6) Engine L (Lubricating)
- (a) Specific gravity 0.895
- (b) Viscosity (Engler) 6. to 7.5
- (c) Freezing point -20° C.
- (d) Flash point 200° C
- (e) Used for high speed diesels with increased compression ratio E = 16 ÷ 18

(7) Engine - M (Average)
- (a) Specific gravity 0.916
- (b) Viscosity (Engler) 10
- (c) Freezing point -8° C.
- (d) Flash point 195° C.
- (e) Used for all types of Diesels except high speed engines.

(8) Engine - T (Heavy)
- (a) Specific gravity 0.921
- (b) Viscosity (Engler) 12 to 18
- (c) Freezing point 0° C.
- (d) Flash point 205° C.
- (e) Used for low speed engines.

(9) Cylinder oil - 2
- (a) Specific gravity 0.886 to 0.916
- (b) Freezing point 5° C.
- (c) Flash point 215° C.
- (d) Used for the lubrication of cylinders of steam engines with a saturated steam pressure of up to five atmospheres and also for the lubrication of the hot parts of the internal combustion engines.

(10) Viscosine - 3
- (a) Specific gravity 0.9
- (b) Flash point 240° C.
- (c) Used for the lubrication of cylinders in steam engines with a saturated

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steam pressure of five to twelve atmospheres.

(11) Axle oil

(a) Specific gravity	0.876 to 0.926
(b) Freeze point	- 35° C.
(c) Flash point	100° C.

(d) Used for the lubrication of low speed steam engines

Industrial Oils

(1) Spindle - 3

(a) Specific gravity	0.881 to 0.901
(b) Freeze point	-15° C.
(c) Flash point	170° C.

(d) Used for metal working machines.

(2) Spindle - 3V (Leached)

(a) Specific gravity	0.906 to 0.912
(b) Freezing point	-15° C
(c) Flash point	170° C

(d) Used for metal working machines

(3) Compressor - L (Light weight)

(a) Specific gravity	0.891 to 0.906
(b) Freezing point	- 8° C.
(c) Flash point	200° C.

(d) Used for compressors with an output up to 300 cubic meters/minute.

(4) Compressor - M

(a) Specific gravity	0.891 to 0.916
(b) Flash point	218° C.

(c) Used for compressors with an output of more than 300 cubic meters/minute.

(5) Compressor -1

(a) Specific gravity	0.891 to 0.916
(b) Flash point	240° C.

(c) Used for multiple stage high pressure compressors

(6) Transformer

(a) Specific gravity	0.896
(b) Freezing point	-45° C.
(c) Flash point	140° C.
(d) Specific resistance at 15° C.	10^{12} ohms/cubic cm.

(e) Used for the cooling of the coils of transformers and rheostats.

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